SEQUENCE LISTING

<110> Bristol-Myers Squibb Company

<120>   A NOVEL HUMAN LEUCINE-RICH REPEAT CONTAINING PROTEIN EXPRESSED
PREDOMINATELY IN SMALL INTESTINE, HLRRSI1

<130>   D0066NP

<150>   US 60/257,774
<151>   2000-12-22

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<170>   PatentIn version 3.0

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              Met Leu Ala Gln Pro Gln Arg Leu Leu Phe Ile Leu
              1   5   10

gac ggc gcg gac gag ctg ccg gcg ctg ggg ggc ccc gag gcc gcg ccc   158
Asp Gly Ala Asp Glu Leu Pro Ala Leu Gly Gly Pro Glu Ala Ala Pro
        15   20   25

tgc aca gac ccc ttc gag gcg gcg agc ggc gcg cgg gtg cta ggc ggg   206
Cys Thr Asp Pro Phe Glu Ala Ala Ser Gly Ala Arg Val Leu Gly Gly
    30   35   40

ctg ctg agt aag gcg ctg ctg ccc aag gcc ctc ctg ctg gtg acc acg   254
Leu Leu Ser Lys Ala Leu Leu Pro Thr Ala Leu Leu Leu Val Thr Thr
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cgc gcc gcc gcc ccc ggg agg ctg cag ggc cgc ctg tgt tcc ccg cag   302
Arg Ala Ala Ala Pro Gly Arg Leu Gln Gly Arg Leu Cys Ser Pro Gln
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tgc gcc gag gtg cgc ggc ttc tcc gac aag gac aag aag aag tat ttc   350
Cys Ala Glu Val Arg Gly Phe Ser Asp Lys Asp Lys Lys Lys Tyr Phe
                80   85   90

tat aag ttc ttc cgt gat gag cgg agg gcc gag cgc gcc tac cgc ttc   398
Tyr Lys Phe Phe Arg Asp Glu Arg Arg Ala Glu Arg Ala Tyr Arg Phe
            95   100   105

gtg aag gag aat gag acg ctg ttc gcc ctg tgc ttc gtc ccc ttc gtg   446
Val Lys Glu Asn Glu Thr Leu Phe Ala Leu Cys Phe Val Pro Phe Val
        110   115   120

tgt tgc atc gca tgt gcc cgc acc cat cag ctc aac ctc tgt cag   494

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gac ctg tcg cgc acg tcc aag acc acc acg tca gtg tac ctg ctt ttc      542
Asp Leu Ser Arg Thr Ser Lys Thr Thr Thr Ser Val Tyr Leu Leu Phe
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atc acc agc gtt ctg agc tcg gct ccg gta acc gac ggg ccc cgg ttg      590
Ile Thr Ser Val Leu Ser Ser Ala Pro Val Ala Asp Gly Pro Arg Leu
                160                 165                 170

cag ggc gac ctg cgc aat ctg tgc cgc ctg gcc cgg gag ggc gtc ctc      638
Gln Gly Asp Leu Arg Asn Leu Cys Arg Leu Ala Arg Glu Gly Val Leu
                175                 180                 185

gga cgc agg gcg cag ttt gcc gag aag gaa ctg gag caa ctg gag ctt      686
Gly Arg Arg Ala Gln Phe Ala Glu Lys Glu Leu Glu Gln Leu Glu Leu
                190                 195                 200

cgt ggc tcc aaa gtg cag acg ctt ttt ctc agc aaa aag gag ctg ccg      734
Arg Gly Ser Lys Val Gln Thr Leu Phe Leu Ser Lys Lys Glu Leu Pro
205                 210                 215                 220

ggc gtg ctg gag aca gag gtc acc tac cag ttc atc gac cag agc ttc      782
Gly Val Leu Glu Thr Glu Val Thr Tyr Gln Phe Ile Asp Gln Ser Phe
                225                 230                 235

cag gag ttc ctc gcg gca ctg tcc tac ctg ctg gag gac ggc ggg gtg      830
Gln Glu Phe Leu Ala Ala Leu Ser Tyr Leu Leu Glu Asp Gly Gly Val
                240                 245                 250

ccc agg acc gcg gct ggc ggc gtt ggg aca ctc ctg cgt ggg gac gcc      878
Pro Arg Thr Ala Ala Gly Gly Val Gly Thr Leu Leu Arg Gly Asp Ala
                255                 260                 265

cag ccg cac agc cac ttg gtg ctc acc acg cgc ttc ctc ttc gga ctg      926
Gln Pro His Ser His Leu Val Leu Thr Thr Arg Phe Leu Phe Gly Leu
                270                 275                 280

ctg agc gcg gag cgg atg cgc gac atc gag cgc cac ttc ggc tgc atg      974
Leu Ser Ala Glu Arg Met Arg Asp Ile Glu Arg His Phe Gly Cys Met
285                 290                 295                 300

gtt tca gag cgt gtg aag cag gag gcc ctg cgg tgg gtg cag gga cag     1022
Val Ser Glu Arg Val Lys Gln Glu Ala Leu Arg Trp Val Gln Gly Gln
                305                 310                 315

gga cag ggc tgc ccg gga gtg gca cca gag gtg acc gag ggg gcc aaa     1070
Gly Gln Gly Cys Pro Gly Val Ala Pro Glu Val Thr Glu Gly Ala Lys
                320                 325                 330

ggg ctc gag gac acc gaa gag cca gag gag gag gag gag gga gag cag     1118
Gly Leu Glu Asp Thr Glu Glu Pro Glu Glu Glu Glu Glu Gly Glu Gln
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ccc aat tac cca ctg gag ttg ctg tac tgc ctg tac gag aca cag gag     1166
Pro Asn Tyr Pro Leu Glu Leu Leu Tyr Cys Leu Tyr Glu Thr Gln Glu
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gac gcc atc gtg gcg cga cag gcc aag tgc cgg atc ccc gag ctg gcc ctc  1214
Asp Ala Ile Val Ala Arg Gln Ala Lys Cys Arg Ile Pro Glu Leu Ala Leu
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2

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cag cga gtg cgc ttc tgc cgc atg gac gtg gct gtt ctg agc tac tgc   1262
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gtg agg tgc tgc cct ggt gga cag gca ctg cgg ctg atc agc tgc aga   1310
Val Arg Cys Cys Pro Ala Gly Gln Ala Leu Arg Leu Ile Ser Cys Arg
            400                 405                 410

ttg gtt gct gcg cag gag aag aag aag agc ctg ggg aag cgg ctc   1358
Leu Val Ala Ala Gln Glu Lys Lys Lys Ser Leu Gly Lys Arg Leu
            415                 420                 425

cag gcc agc ctg ggt ggc ggc agt tct caa ggc acc aca aaa cta ctg   1406
Gln Ala Ser Leu Gly Gly Gly Ser Ser Gln Gly Thr Thr Lys Gln Leu
        430                 435                 440

cca gcc tcc ctt ctt cat cca ctc ttt cag gca atg act gac cca ctg   1454
Pro Ala Ser Leu Leu His Pro Leu Phe Gln Ala Met Thr Asp Pro Leu
445                 450                 455                 460

tgc cat ctg agc agc ctc acg ctg tcc cac tgc aaa ctc cct gac gcg   1502
Cys His Leu Ser Ser Leu Thr Leu Ser His Cys Lys Leu Pro Asp Ala
                465                 470                 475

gtc tgc cga gac ctt tct gag gtc ctg agg gca gtc cca gca ctg acg   1550
Val Cys Arg Asp Leu Ser Glu Val Leu Arg Ala Ala Pro Ala Leu Thr
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Glu Leu Gly Leu Leu His Asn Arg Leu Ser Glu Ala Gly Leu Arg Met
            495                 500                 505

ctg agt gag ggc cta gcc tgg ccg cag tgc agg gtg cag acg gtc agg   1646
Leu Ser Glu Gly Leu Ala Trp Pro Gln Cys Arg Val Gln Thr Val Arg
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gta cag ctg cct gac ccc cag cca ggg ctc cag tac ctg gtg ggt atg   1694
Val Gln Leu Pro Asp Pro Gln Arg Gly Leu Gln Tyr Leu Val Gly Met
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ctt cgg cag agc ccc gcc ctg acc acc ctg gat ctc agc ggc tgc caa   1742
Leu Arg Gln Ser Pro Ala Leu Thr Thr Leu Asp Leu Ser Gly Cys Gln
                545                 550                 555

ctg ccc gcc ccc atg gtg acc tac ctg tgt gca gtc ctg cag cac cag   1790
Leu Pro Ala Pro Met Val Thr Tyr Leu Cys Ala Val Leu Gln His Gln
                560                 565                 570

gga tgc ggc ctg cag acc ctc agt ctg gcc tct gtg gag ctg agc gag   1838
Gly Cys Gly Leu Gln Thr Leu Ser Leu Ala Ser Val Glu Leu Ser Glu
            575                 580                 585

cag tca cta cag gag ctt cag gct gtg aac aga gca aag ccg gat ctg   1886
Gln Ser Leu Gln Glu Leu Gln Ala Val Lys Arg Ala Lys Pro Asp Leu
        590                 595                 600

gtc atc aca cac cca gcg ctg gac ggc cac cca caa cct ccc aag gaa   1934
Val Ile Thr His Pro Ala Leu Asp Gly His Pro Gln Pro Pro Lys Glu
605                 610                 615                 620
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3

ctc atc tcg acc ttc tgaggctctg gtggccagag caggtgggaa gaccctagtc   1939
Leu Ile Ser Thr Phe
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aaagtccctg tggagagaac ggcccattcc aaggcagga ggatattgct ctcggccttt   2049

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tttgggaagg cagactaggg caggtggaga cagcgcagaa ccccgtgct gggtgggaag   2529

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Phe Glu Ala Ala Ser Gly Ala Arg Val Leu Gly Gly Leu Leu Ser Lys
        35                  40                  45


Ala Leu Leu Pro Thr Ala Leu Leu Leu Val Thr Thr Arg Ala Ala Ala
    50                  55                  60


Pro Gly Arg Leu Gln Gly Arg Leu Cys Ser Pro Gln Cys Ala Glu Val
65                  70                  75                  80


Arg Gly Phe Ser Asp Lys Asp Lys Lys Tyr Phe Tyr Lys Phe Ile
            85                  90                  95
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4

Arg Asp Glu Arg Arg Ala Glu Arg Ala Tyr Arg Phe Val Lys Glu Asn
            100   105   110

Glu Thr Leu Phe Ala Leu Cys Phe Val Pro Phe Val Cys Trp Ile Val
            115   120   125

Cys Thr Val Leu Arg Gln Gln Leu Glu Leu Gly Arg Asp Leu Ser Arg
        130   135   140

Thr Ser Lys Thr Thr Thr Ser Val Tyr Leu Leu Phe Ile Thr Ser Val
145   150   155   160

Leu Ser Ser Ala Pro Val Ala Asp Gly Pro Arg Leu Gln Gly Asp Leu
                165   170   175

Arg Asn Leu Cys Arg Leu Ala Arg Glu Gly Val Leu Gly Arg Arg Ala
            180   185   190

Gln Phe Ala Glu Lys Glu Leu Glu Gln Leu Glu Leu Arg Gly Ser Lys
            195   200   205

Val Gln Thr Leu Phe Leu Ser Lys Lys Glu Leu Pro Gly Val Leu Glu
    210   215   220

Thr Glu Val Thr Tyr Gln Phe Ile Asp Gln Ser Phe Gln Glu Phe Leu
225   230   235   240

Ala Ala Leu Ser Tyr Leu Leu Glu Asp Gly Gly Val Pro Arg Thr Ala
                245   250   255

Ala Gly Gly Val Gly Thr Leu Leu Arg Gly Asp Ala Gln Pro His Ser
                260   265   270

His Leu Val Leu Thr Thr Arg Phe Leu Phe Gly Leu Leu Ser Ala Glu
        275   280   285

Arg Met Arg Asp Ile Glu Arg His Phe Gly Cys Met Val Ser Glu Arg
    290   295   300

Val Lys Gln Glu Ala Leu Arg Trp Val Gln Gly Gln Gly Gln Gly Tyr
305   310   315   320

Pro Gly Val Ala Pro Glu Val Thr Glu Gly Ala Lys Gly Leu Glu Asp
                325   330   335

Thr Ala Glu Pro Ala Glu Gln Glu Glu Gly Glu Glu Pro Asn Tyr Pro

5

Leu Glu Leu Leu Tyr Cys Leu Tyr Glu Thr Gln Glu Asp Ala Phe Val
   355   360   365

Arg Gln Ala Leu Cys Arg Phe Pro Glu Leu Ala Leu Gln Arg Val Arg
   370   375   380

Phe Cys Arg Met Asp Val Ala Val Leu Ser Tyr Cys Val Arg Cys Cys
385   390   395   400

Pro Ala Gly Gln Ala Leu Arg Leu Ile Ser Cys Arg Leu Val Ala Ala
    405   410   415

Gln Glu Lys Lys Lys Lys Ser Leu Gly Lys Arg Leu Gln Ala Ser Leu
    420   425   430

Gly Gly Gly Ser Ser Gln Gly Thr Thr Lys Gln Leu Pro Ala Ser Leu
   435   440   445

Leu His Pro Leu Phe Gln Ala Met Thr Asp Pro Leu Cys His Leu Ser
  450   455   460

Ser Leu Thr Leu Ser His Cys Lys Leu Pro Asp Ala Val Cys Arg Asp
465   470   475   480

Leu Ser Glu Ala Leu Arg Ala Ala Pro Ala Leu Thr Glu Leu Gly Leu
    485   490   495

Leu His Asn Arg Leu Ser Glu Ala Gly Leu Arg Met Leu Ser Glu Gly
    500   505   510

Leu Ala Trp Pro Gln Cys Arg Val Gln Thr Val Arg Val Gln Leu Pro
   515   520   525

Asp Pro Gln Arg Gly Leu Gln Tyr Leu Val Gly Met Leu Arg Gln Ser
  530   535   540

Pro Ala Leu Thr Thr Leu Asp Leu Ser Gly Cys Gln Leu Pro Ala Pro
545   550   555   560

Met Val Thr Tyr Leu Cys Ala Val Leu Gln His Gln Gly Cys Gly Leu
   565   570   575

Gln Thr Leu Ser Leu Ala Ser Val Glu Leu Ser Glu Gln Asp Leu Gln
   580   585   590

Glu Leu Gln Ala Val Lys Arg Ala Lys Pro Asp Leu Val Ile Thr His
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Pro Ala Leu Asp Gly His Pro Gln Pro Pro Lys Glu Leu Ile Ser Thr
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Phe
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His Ser Arg Ser Ser Ser Gly Glu Thr Pro Ala Gln Pro Glu Lys Thr
35 40 45

Ser Gly Met Glu Val Ala Ser Tyr Leu Val Ala Gln Tyr Gly Glu Gln
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Arg Ala Trp Asp Leu Ala Leu His Thr Trp Glu Gln Met Gly Leu Arg
65 70 75 80

Ser Leu Cys Ala Gln Ala Gln Glu Gly Ala Gly His Ser Pro Ser Phe
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Pro Tyr Ser Pro Ser Glu Pro His Leu Gly Ser Pro Ser Gln Pro Thr
100 105 110

Ser Thr Ala Val Leu Met Pro Trp Ile His Glu Leu Pro Ala Gly Cys
115 120 125

Thr Gln Gly Ser Glu Arg Arg Val Leu Arg Gln Leu Pro Asp Thr Ser
130 135 140

Gly Arg Arg Trp Arg Glu Ile Ser Ala Ser His Leu Tyr Gln Ala Leu
145 150 155 160

Pro Ser Ser Pro Asp His Glu Ser Pro Ser Gln Glu Ser Pro Asn Ala
165 170 175

Pro Thr Ser Thr Ala Val Leu Gly Ser Trp Gly Ser Pro Pro Gln Pro
180 185 190

Ser Leu Ala Pro Arg Glu Gln Glu Ala Pro Gly Thr Gln Trp Pro Leu
195 200 205

Asp Glu Thr Ser Gly Ile Tyr Tyr Thr Glu Ile Arg Glu Arg Glu Arg

Glu Lys Ser Glu Lys Gly Arg Pro Pro Trp Ala Ala Val Val Gly Thr
225　　　　　　　230　　　　　　　235　　　　　　　240

Pro Pro Gln Ala His Ser Ser Leu Gln Pro His His His Pro Trp Glu
　　　　　　　245　　　　　　　250　　　　　　　255

Pro Ser Val Arg Glu Ser Leu Cys Ser Thr Trp Pro Trp Lys Asn Glu
　　　　　　　260　　　　　　　265　　　　　　　270

Asp Phe Asn Gln Lys Phe Thr Gln Leu Leu Leu Leu Gln Arg Pro His
　　　　　　　275　　　　　　　280　　　　　　　285

Pro Arg Ser Gln Asp Pro Leu Val Lys Arg Ser Trp Pro Asp Tyr Val
　　　　　　　290　　　　　　　295　　　　　　　300

Glu Glu Asn Arg Gly His Leu Ile Glu Ile Arg Asp Leu Phe Gly Pro
305　　　　　　　310　　　　　　　315　　　　　　　320

Gly Leu Asp Thr Gln Glu Pro Arg Ile Val Ile Leu Gln Gly Ala Ala
　　　　　　　325　　　　　　　330　　　　　　　335

Gly Ile Gly Lys Ser Thr Leu Ala Arg Gln Val Lys Glu Ala Trp Gly
　　　　　　　340　　　　　　　345　　　　　　　350

Arg Gly Gln Leu Tyr Gly Asp Arg Phe Gln His Val Phe Tyr Phe Ser
　　　　　　　355　　　　　　　360　　　　　　　365

Cys Arg Glu Leu Ala Gln Ser Lys Val Val Ser Leu Ala Glu Leu Ile
　　　　　　　370　　　　　　　375　　　　　　　380

Gly Lys Asp Gly Thr Ala Thr Pro Ala Pro Ile Arg Gln Ile Leu Ser
385　　　　　　　390　　　　　　　395　　　　　　　400

Arg Pro Glu Arg Leu Leu Phe Ile Leu Asp Gly Val Asp Glu Pro Gly
　　　　　　　405　　　　　　　410　　　　　　　415

Trp Val Leu Gln Glu Pro Ser Ser Glu Leu Cys Leu His Trp Ser Gln
　　　　　　　420　　　　　　　425　　　　　　　430

Pro Gln Pro Ala Asp Ala Leu Leu Gly Ser Leu Leu Gly Lys Thr Ile
　　　　　　　435　　　　　　　440　　　　　　　445

Leu Pro Glu Ala Ser Phe Leu Ile Thr Ala Arg Thr Thr Ala Leu Gln
　　　　　　　450　　　　　　　455　　　　　　　460

Asn Leu Ile Pro Ser Leu Glu Gln Ala Arg Trp Val Glu Val Leu Gly
465　　　　　　　470　　　　　　　475　　　　　　　480

Phe Ser Glu Ser Ser Arg Lys Glu Tyr Phe Tyr Arg Tyr Phe Thr Asp
　　　　　　　485　　　　　　　490　　　　　　　495

Glu Arg Gln Ala Ile Arg Ala Phe Arg Leu Val Lys Ser Asn Lys Glu
　　　　　　　500　　　　　　　505　　　　　　　510

Leu Trp Ala Leu Cys Leu Val Pro Trp Val Ser Trp Leu Ala Cys Thr
　　　　　　　515　　　　　　　520　　　　　　　525

Cys Leu Met Gln Gln Met Lys Arg Lys Glu Lys Leu Thr Leu Thr Ser
　　　　　　　530　　　　　　　535　　　　　　　540

Lys Thr Thr Thr Thr Leu Cys Leu His Tyr Leu Ala Gln Ala Leu Gln
545   550   555   560

Ala Gln Pro Leu Gly Pro Gln Leu Arg Asp Leu Cys Ser Leu Ala Ala
                565   570   575

Glu Gly Ile Trp Gln Lys Lys Thr Leu Phe Ser Pro Asp Asp Leu Arg
                580   585   590

Lys His Gly Leu Asp Gly Ala Ile Ile Ser Thr Phe Leu Lys Met Gly
                595   600   605

Ile Leu Gln Glu His Pro Ile Pro Leu Ser Tyr Ser Phe Ile His Leu
610   615   620

Cys Phe Gln Glu Phe Phe Ala Ala Met Ser Tyr Val Leu Glu Asp Glu
625   630   635   640

Lys Gly Arg Gly Lys His Ser Asn Lys Ile Ile Asp Leu Glu Lys Thr
                645   650   655

Leu Glu Ala Tyr Gly Ile His Gly Leu Phe Gly Ala Ser Thr Thr Arg
                660   665   670

Phe Leu Leu Gly Leu Leu Ser Asp Glu Gly Glu Arg Glu Met Glu Asn
                675   680   685

Ile Phe His Cys Arg Leu Ser Gln Gly Arg Asn Leu Met Gln Trp Val
                690   695   700

Pro Ser Leu Gln Leu Leu Leu Gln Pro His Ser Leu Glu Ser Leu His
705   710   715   720

Cys Leu Tyr Glu Thr Arg Asn Lys Thr Phe Leu Thr Gln Val Met Ala
                725   730   735

His Phe Glu Glu Met Gly Met Cys Val Glu Thr Asp Met Glu Leu Leu
                740   745   750

Val Cys Thr Phe Cys Ile Lys Phe Ser Arg His Val Lys Lys Leu Gln
                755   760   765

Leu Ile Glu Gly Arg Gln His Arg Ser Thr Trp Ser Pro Ser Met Val
                770   775   780

Val Leu Phe Arg Trp Val Pro Val Thr Asp Ala Tyr Trp Gln Ile Leu
785   790   795   800

Phe Ser Val Leu Lys Val Thr Arg Asn Leu Lys Glu Leu Asp Leu Ser
                805   810   815

Gly Asn Ser Leu Ser His Ser Ala Val Lys Ser Leu Cys Lys Thr Leu
                820   825   830

Arg Arg Pro Arg Cys Leu Leu Glu Thr Leu Arg Leu Ala Gly Cys Gly
                835   840   845

Leu Thr Ala Glu Asp Cys Lys Asp Leu Ala Phe Gly Leu Arg Ala Asn
850   855   860

9

Gln Thr Leu Thr Glu Leu Asp Leu Ser Phe Asn Val Leu Met Asp Ala
865   870   875   880

Gly Ala Lys His Leu Cys Gln Arg Leu Arg Gln Pro Ser Cys Lys Leu
              885   890   895

Gln Arg Leu Gln Leu Val Ser Cys Gly Leu Thr Ser Asp Cys Cys Gln
         900   905   910

Asp Leu Ala Ser Val Leu Ser Ala Ser Pro Ser Leu Lys Glu Leu Asp
         915   920   925

Leu Gln Gln Asn Asn Leu Asp Asp Val Gly Val Arg Leu Leu Cys Glu
         930   935   940

Gly Leu Arg His Pro Ala Cys Lys Leu Ile Arg Leu Gly Leu Asp Gln
945   950   955   960

Thr Thr Leu Ser Asp Glu Met Arg Gln Glu Leu Arg Ala Leu Glu Gln
              965   970   975

Glu Lys Pro Gln Leu Leu Ile Phe Ser Arg Arg Lys Pro Ser Val Met
         980   985   990

Thr Pro Ile Glu Gly Leu Asp Thr Gly Glu Met Ser Asn Ser Thr Ser
         995   1000   1005

Ser Leu Lys Arg Gln Arg Leu Gly Ser Glu Arg Ala Ala Ser His
         1010   1015   1020

Val Ala Gln Ala Asn Leu Lys Leu Leu Asp Val Ser Lys Ile Phe
    1025   1030   1035

Pro Ile Ala Glu Ile Ala Glu Glu Ser Ser Pro Glu Val Val Pro
    1040   1045   1050

Val Glu Leu Leu Cys Val Pro Ser Pro Ala Ser Gln Gly Asp Leu
    1055   1060   1065

His Thr Lys Pro Leu Gly Thr Asp Asp Asp Phe Trp Gly Pro Thr
    1070   1075   1080

Gly Pro Val Ala Thr Glu Val Val Asp Lys Glu Lys Asn Leu Tyr
    1085   1090   1095

Arg Val His Phe Pro Val Ala Gly Ser Tyr Arg Trp Pro Asn Thr
    1100   1105   1110

Gly Leu Cys Phe Val Val Arg Glu Ala Val Thr Val Glu Ile Glu
    1115   1120   1125

Ile Cys Val Trp Asp Gln Phe Leu Gly Glu Ile Asn Pro Gln His
    1130   1135   1140

Ser Trp Met Val Ala Gly Pro Leu Leu Asp Ile Lys Ala Glu Pro
    1145   1150   1155

Gly Ala Val Glu Ala Val His Leu Pro His Phe Val Ala Leu Gln
    1160   1165   1170

Gly Gly His Val Arg Thr Ser Leu Ile Gln Val Ala His Ile Tyr

10

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          1175                 1180                 1185
Glu Glu  Gly Met Leu Leu Glu  Lys Pro Ala Arg Val  Glu Leu His
         1190                 1195                 1200

His Ile  Val Leu Glu Asn Pro  Ser Phe Ser Pro Leu  Gly Val Leu
         1205                 1210                 1215

Leu Lys  Met Ile His Asn Ala  Leu Arg Phe Ile Pro  Val Thr Ser
         1220                 1225                 1230

Val Val  Leu Leu Tyr His Arg  Leu His Pro Glu Glu  Val Thr Phe
         1235                 1240                 1245

His Leu  Tyr Leu Ile Pro Ser  Asp Cys Ser Ile Arg  Lys Glu Leu
         1250                 1255                 1260

Glu Leu  Cys Tyr Arg Ser Pro  Gly Glu Asp Gln Leu  Phe Ser Glu
         1265                 1270                 1275

Phe Tyr  Val Gly His Leu Gly  Ser Gly Ile Arg Leu  Gln Val Lys
         1280                 1285                 1290

Asp Lys  Lys Asp Glu Thr Leu  Val Trp Glu Ala Leu  Val Lys Pro
         1295                 1300                 1305

Gly Asp  Leu Met Pro Ala Thr  Thr Leu Ile Pro Pro  Ala Cys Ile
         1310                 1315                 1320

Ala Val  Pro Ser Pro Leu Asp  Ala Pro Gln Leu Leu  His Phe Val
         1325                 1330                 1335

Asp Gln  Tyr Arg Glu Gln Leu  Ile Ala Arg Val Thr  Ser Val Glu
         1340                 1345                 1350

Val Val  Leu Asp Lys Leu His  Gly Gln Val Leu Ser  Gln Glu Gln
         1355                 1360                 1365

Tyr Glu  Arg Val Leu Ala Glu  Asn Thr Arg Pro Ser  Gln Met Arg
         1370                 1375                 1380

Lys Leu  Phe Ser Leu Ser Gln  Ser Trp Asp Arg Lys  Cys Lys Asp
         1385                 1390                 1395

Gly Leu  Tyr Gln Ala Leu Lys  Glu Thr His Pro His  Leu Ile Met
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Glu Leu  Trp Glu Lys Gly Ser  Lys Lys Gly Leu Leu  Pro Leu Ser
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Leu Gln Lys Ile Pro His Lys Glu Val Asp Lys Ala Asp Gly Lys Gln
        35                  40                  45

Leu Val Glu Ile Leu Thr Thr His Cys Asp Ser Tyr Trp Val Glu Met
        50                  55                  60

Ala Ser Leu Gln Val Phe Glu Lys Met His Arg Met Asp Leu Ser Glu
65                  70                  75                  80

Arg Ala Lys Asp Glu Val Arg Glu Ala Ala Leu Lys Ser Phe Asn Lys
                85                  90                  95

Arg Lys Pro Leu Ser Leu Gly Ile Thr Arg Lys Glu Arg Pro Pro Leu
            100                 105                 110

Asp Val Asp Glu Met Leu Glu Arg Phe Lys Thr Glu Ala Gln Asp Lys
            115                 120                 125

Asp Asn Arg Cys Arg Tyr Ile Leu Lys Thr Lys Phe Arg Glu Met Trp
        130                 135                 140

Lys Ser Trp Pro Gly Asp Ser Lys Glu Val Gln Val Met Ala Glu Arg
145                 150                 155                 160

Tyr Lys Met Leu Ile Pro Phe Ser Asn Pro Arg Val Leu Pro Gly Pro
            155                 170                 175

Phe Ser Tyr Thr Val Val Leu Tyr Gly Pro Ala Gly Leu Gly Lys Thr
            180                 185                 190

Thr Leu Ala Gln Lys Leu Met Leu Asp Trp Ala Glu Asp Asn Leu Ile
        195                 200                 205

His Lys Phe Lys Tyr Ala Phe Tyr Leu Ser Cys Arg Glu Leu Ser Arg
        210                 215                 220

Leu Gly Pro Cys Ser Phe Ala Glu Leu Val Phe Arg Asp Trp Pro Glu
225                 230                 235                 240

Leu Gln Asp Asp Ile Pro His Ile Leu Ala Gln Ala Arg Lys Ile Leu
            245                 250                 255

Phe Val Ile Asp Gly Phe Asp Glu Leu Gly Ala Ala Pro Gly Ala Leu
            260                 265                 270

Ile Glu Asp Ile Cys Gly Asp Trp Glu Lys Lys Lys Pro Val Pro Val
            275                 280                 285

Leu Leu Gly Ser Leu Leu Asn Arg Val Met Leu Pro Lys Ala Ala Leu
        290                 295                 300

Leu Val Thr Thr Arg Pro Arg Ala Leu Arg Asp Leu Arg Ile Leu Ala
305                 310                 315                 320

Glu Glu Pro Ile Tyr Ile Arg Val Glu Gly Phe Leu Glu Gln Asp Lys
            325
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Arg Ala Tyr Phe Leu Arg His Phe Gly Asp Glu Asp Gln Ala Met Arg
        340   345   350

Ala Phe Glu Leu Met Arg Ser Asn Ala Ala Leu Phe Gln Leu Gly Ser
        355   360   365

Ala Pro Ala Val Cys Trp Ile Val Cys Thr Thr Leu Lys Leu Gln Met
        370   375   380

Glu Lys Gly Glu Asp Pro Val Pro Thr Cys Leu Thr Arg Thr Gly Leu
385   390   395   400

Phe Leu Arg Phe Leu Cys Ser Arg Phe Pro Gln Gly Ala Gln Leu Arg
                405   410   415

Gly Ala Leu Arg Thr Leu Ser Leu Leu Ala Ala Gln Gly Leu Trp Ala
            420   425   430

Gln Thr Ser Val Leu His Arg Glu Asp Leu Glu Arg Leu Gly Val Gln
        435   440   445

Glu Ser Asp Leu Arg Leu Phe Leu Asp Gly Asp Ile Leu Arg Gln Asp
    450   455   460

Arg Val Ser Lys Gly Cys Tyr Ser Phe Ile His Leu Ser Phe Gln Gln
465   470   475   480

Phe Leu Thr Ala Leu Phe Tyr Thr Leu Glu Lys Glu Glu Glu Glu Asp
                485   490   495

Arg Asp Gly His Thr Trp Asp Ile Gly Asp Val Gln Lys Leu Leu Ser
            500   505   510

Gly Val Glu Arg Leu Arg Asn Pro Asp Leu Ile Gln Ala Gly Tyr Tyr
        515   520   525

Ser Phe Gly Leu Ala Asn Glu Lys Arg Ala Lys Glu Leu Glu Ala Thr
    530   535   540

Phe Gly Cys Arg Met Ser Pro Asp Ile Lys Gln Glu Leu Leu Arg Cys
545   550   555   560

Asp Ile Ser Cys Lys Gly Gly His Ser Thr Val Thr Asp Leu Gln Glu
                565   570   575

Leu Leu Gly Cys Leu Tyr Glu Ser Gln Glu Glu Glu Leu Val Lys Glu
            580   585   590

Val Met Ala Gln Phe Lys Glu Ile Ser Leu His Leu Asn Ala Val Asp
        595   600   605

Val Val Pro Thr Ser His Cys Val Lys His Cys Arg Asn Leu Gln Tyr
    610   615   620

Met Ser Leu Gln Val Lys Lys Glu Asn Leu Pro Glu Asn Val Thr Ala
625   630   635   640

Ser Glu Ser Asp Ala Glu Val Glu Arg Ser Gln Asp Asp Gln His Met
                645   650   655

13

Leu Pro Phe Trp Thr Asp Leu Cys Ser Ile Phe Gly Ser Asn Lys Asp
        660   665   670

Leu Met Gly Leu Ala Ile Asn Asp Ser Phe Leu Ser Ala Ser Leu Val
        675   680   685

Arg Ile Leu Cys Glu Gln Ile Ala Ser Asp Thr Cys His Leu Gln Arg
    690   695   700

Val Val Phe Lys Asn Ile Ser Pro Ala Asp Ala His Arg Asn Leu Cys
705   710   715   720

Leu Ala Leu Arg Gly His Lys Thr Val Thr Tyr Leu Thr Leu Gln Gly
                725   730   735

Asn Asp Gln Asp Asp Met Phe Pro Ala Leu Cys Glu Val Leu Arg His
            740   745   750

Pro Glu Cys Asn Leu Arg Tyr Leu Gly Leu Val Ser Cys Ser Ala Thr
        755   760   765

Thr Gln Gln Trp Ala Asp Leu Ser Leu Ala Leu Glu Val Asn Gln Ser
    770   775   780

Leu Thr Cys Val Asn Leu Ser Asp Asn Glu Leu Leu Asp Glu Gly Ala
785   790   795   800

Lys Leu Leu Tyr Thr Thr Leu Arg His Pro Lys Cys Phe Leu Gln Arg
            805   810   815

Leu Ser Leu Glu Asn Cys His Leu Thr Glu Ala Asn Cys Lys Asp Leu
            820   825   830

Ala Ala Val Leu Val Val Ser Arg Glu Leu Thr His Leu Cys Leu Ala
        835   840   845

Lys Asn Pro Ile Gly Asn Thr Gly Val Lys Phe Leu Cys Glu Gly Leu
    850   855   860

Arg Tyr Pro Glu Cys Lys Leu Gln Thr Leu Val Leu Trp Asn Cys Asp
865   870   875   880

Ile Thr Ser Asp Gly Cys Cys Asp Leu Thr Lys Leu Leu Gln Glu Lys
            885   890   895

Ser Ser Leu Leu Cys Leu Asp Leu Gly Leu Asn His Ile Gly Val Lys
        900   905   910

Gly Met Lys Phe Leu Cys Glu Ala Leu Arg Lys Pro Leu Cys Asn Leu
    915   920   925

Arg Cys Leu Trp Leu Trp Gly Cys Ser Ile Pro Pro His Ser Cys Glu
    930   935   940

Asp Leu Cys Ser Ala Leu Ser Asn Gln Ser Leu Val Thr Leu Asp Leu
945   950   955   960

Gly His Asn Ile Leu Gly Ser Pro Gly Val Lys Met Leu Phe Glu Thr
            965   970   975

Leu Thr Cys Pro Pro Gly Thr Leu Arg Thr Leu Arg Leu Lys Ile Arg

14

980   985   990

Asp Phe Asn Asp Glu Leu Asn Lys Leu Leu Glu Glu Ile Glu Glu Lys
        995   1000   1005

Asn Pro Gln Leu Ile Ile Asp Thr Glu Lys His His Pro Trp Ala
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Glu Arg Pro Ser Ser His Asp Phe Met Ile
    1025   1030

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<213> Homo Sapiens

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cgagtggcgc gcgggtgcta ggcgggctgc tgagtaaggc gctgctgccc acggccctcc   240

tgcttgtgac cacgcgcc gccgccccg ggaggctgca ggaccgcctg tgttcccgc   300

agtgcgcga ggtgcgcggc ttcttcgaca aggacaagaa gaagtatttc tacaagttct   360

ttcgtgatga gaggagggcc gagcgcgcct accgcttcgt gaaggagaac gagacgctgt   420

tggcgctgtg cttcgtgccc ttcgtgtgct ggatcgtgtg cacgtgctg cgccagcagc   480

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tgcgcaatct gtgccgcctg gcccgcgagg gcgtcctcgg acgcagggcg cagtttgccg   660

agaaggaact ggagcaactg gagcttcgtg gctccaaagt gcagacgctg tttctcagca   720

aaaaggagct gccgggcgtg ctggagacag aggtcaccta ccagttcatc gaccagagct   780

tccaggagtt cctcgcggca ctgtcctacc tgctggagga cggcggggtg cccaggaccg   840

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acaccgaaga gccagaggag caggaggagg gtgaggagcc caactaccca ctggagttgc   1140

tgtactgcct gtacgagacg caggaggacg cgtttgtgcg ccaagccctg tgccggttcc   1200

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gaaggatatt gttctcagcc tttaagaaac ttttaagctc agaggccgca aaacagccata   2160

tgggaggcct agcacaggta cccatgcccca tccaggatag gcccaggacc tgccccttctc   2220

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gaacccccgt gctcagtggg aagcattacc acatgggtgc tcagcagccc ccatgcactg   2640

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tacactacag gtcggtgctc acagaaaaaa aaaaaaaaaa aaaaaaaaa aaaaaaaaaa   2760

aaaa   2764

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ctcttctcc tcttaattc tgttacactt ctcttcttct cttcttctct tcctttct       1980
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17

tcacaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa   2040

aaaaaaaaaa aaaa   2054

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<212> DNA
<213> homo sapiens

<220>
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catcgagcgc cacttcgact gcatggtttc agagcgtgtg aagcagcagg ccctgcgatg   120

ggtgcaggga cagggacagg gctgccccgg agtggcacca gaggtgaccg aggggggccaa   180

aggggctcgag gacaccgnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnc ccaactaccc   240

actgaacttc ctgtactgcc tgtacgacac gcagcagcac gcgtttcgtnc gccaaacncc   300

tgtgcaggtt cccg   314

<210> 8
<211> 24
<212> PRT
<213> homo sapiens

<400> 8

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Ala Leu Leu Leu Val Thr Thr Arg
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<210> 9
<211> 17
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<213> homo sapiens

<400> 9

Leu Phe Ala Leu Cys Phe Val Pro Phe Val Cys Trp Ile Val Cys Thr
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Val

<210> 10
<211> 17
<212> PRT
<213> homo sapiens

<400> 10

Ser Val Tyr Leu Leu Phe Ile Thr Ser Val Leu Ser Ser Ala Pro Val
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Ala

<210> 11
<211> 21
<212> DNA
<213> Homo sapiens

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<210> 12
<211> 23
<212> DNA
<213> Homo sapiens

<400> 12
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<210> 13
<211> 80
<212> DNA
<213> Homo sapiens

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nncacicagtc cgaagaggaa   80

<210> 14
<211> 14
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<213> homo sapiens

<400> 14

Arg Phe Val Lys Glu Asn Glu Thr Leu Phe Ala Leu Cys Phe
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<210> 15
<211> 17
<212> PRT
<213> homo sapiens

<400> 15

Phe Phe Arg Asp Glu Arg Arg Ala Glu Arg Ala Tyr Arg Phe Val Lys
1   5   10   15

Glu

<210> 16
<211> 13
<212> PRT
<213> homo sapiens

<400> 16

Ala Leu Leu Leu Val Thr Thr Arg Ala Ala Ala Pro Gly
1   5   10

<210> 17
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<400> 17

Glu Val Arg Gly Phe Ser Asp Lys Asp Lys Lys Lys Tyr
1   5   10

<210> 18
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<400> 18

Arg Asp Leu Ser Arg Thr Ser Lys Thr Thr Thr Ser Val
1   5   10

<210> 19
<211> 13
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<400> 19

Gln Thr Leu Phe Leu Ser Lys Lys Glu Leu Pro Gly Val
1   5   10

<210> 20
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<213> homo sapiens

<400> 20

Ser His Leu Val Leu Thr Thr Arg Phe Leu Phe Gly Leu
1   5   10

<210> 21
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<400> 21

Phe Gly Cys Met Val Ser Glu Arg Val Lys Gln Gln Ala
1   5   10

<400> 22

20

<210> 13
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<400> 12

Ala Leu Arg Leu Ile Ser Cys Arg Leu Val Ala Ala Gln
1   5   10

<210> 27
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<213> Homo sapiens

<400> 13

Gly Ser Ser Gln Gly Thr Thr Lys Gln Leu Pro Ala Ser
1   5   10

<210> 14
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Gln Lys Arg Val Gln Thr Val Arg Val Gln Leu Pro Asp
1   5   10

<210> 28
<211> 514
<212> PRT
<213> Homo sapiens

<400> 25

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Gln Gln Met Glu Ser Gly Lys Ser Leu Ala Gln Thr Ser Lys Thr Ser
                20   25   30

Thr Ala Val Tyr Val Phe Phe Leu Ser Ser Leu Leu Gln Pro Arg Gly
                35   40   45

Gly Ser Gln Glu His Gly Leu Cys Ala His Leu Trp Gly Leu Cys Ser
        50   55   60

Leu Ala Ala Asp Gly Ile Trp Asn Gln Lys Ile Leu Phe Glu Glu Ser
65   70   75   80

Asp Leu Arg Asn His Gly Leu Gln Lys Ala Asp Val Ser Ala Phe Leu
                85   90   95

Arg Met Asn Leu Phe Gln Lys Glu Val Asp Cys Glu Lys Phe Tyr Ser
                100   105   110

Phe Ile His Met Thr Phe Gln Glu Phe Phe Ala Ala Met Tyr Tyr Leu
                115   120   125

Leu Glu Glu Glu Lys Glu Gly Arg Thr Asn Val Pro Gly Ser Arg Leu

21

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          130                    135                    140

Lys Leu Pro Ser Arg Asp Val Thr Val Leu Leu Glu Asn Tyr Gly Lys
145                     150                    155                    160

Phe Glu Lys Gly Tyr Leu Ile Phe Val Val Arg Phe Leu Phe Gly Leu
                    165                    170                    175

Val Asn Gln Glu Arg Thr Ser Tyr Leu Glu Lys Lys Leu Ser Cys Met
                    180                    185                    190

Ile Ser Gln Gln Ile Arg Leu Glu Leu Leu Lys Trp Ile Glu Val Lys
                    195                    200                    205

Ala Lys Ala Lys Lys Leu His Asp Gln Pro Ser Gln Leu Glu Leu Phe
210                     215                    220

Tyr Cys Leu Tyr Glu Met Gln Glu Glu Asp Phe Val Gln Arg Ala Met
225                     230                    235                    240

Asp Tyr Phe Pro Lys Ile Glu Ile Asn Leu Ser Thr Arg Met Asp His
                    245                    250                    255

Met Val Ser Ser Phe Cys Ile Glu Asn Cys His Arg Val Glu Ser Leu
                    260                    265                    270

Ser Leu Gly Phe Leu His Asn Met Pro Lys Glu Glu Glu Glu Glu Glu
                    275                    280                    285

Lys Glu Gly Arg His Leu Asp Met Val Gln Cys Val Leu Pro Ser Ser
                    290                    295                    300

Ser His Ala Ala Cys Ser His Gly Leu Gly Arg Cys Gly Leu Ser His
305                     310                    315                    320

Glu Cys Cys Phe Asp Ile Ser Leu Val Leu Ser Ser Asn Gln Lys Leu
                    325                    330                    335

Val Glu Leu Asp Leu Ser Asp Asn Ala Leu Gly Asp Phe Gly Ile Arg
                    340                    345                    350

Leu Leu Cys Val Gly Leu Lys His Leu Leu Cys Asn Leu Lys Lys Leu
                    355                    360                    365

Trp Leu Val Asn Ser Ala Leu Arg Gln Ser Val Val Gln Leu Cys Pro
370                     375                    380

Arg Tyr Ser Ala Leu Ile Arg Ile Ser Arg Thr Phe Thr Ala Arg Gln
385                     390                    395                    400

His Ser Arg Arg Gln Gly Ile Lys Leu Leu Cys Glu Gly Leu Leu His
                    405                    410                    415

Pro Asp Cys Lys Leu Gln Val Leu Glu Leu Asp Asn Cys Asn Leu Thr
                    420                    425                    430

Ser His Cys Cys Trp Asp Leu Ser Thr Leu Leu Thr Ser Ser Gln Ser
                    435                    440                    445

Leu Arg Lys Leu Ser Leu Gly Asn Asn Asp Leu Gly Asp Leu Gly Val
450                     455                    460
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22

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Met Met Phe Cys Glu Val Leu Lys Gln Gln Ser Cys Leu Leu Gln Asn
465                 470                 475                 480

Leu Gly Leu Ser Glu Met Tyr Phe Asn Tyr Glu Thr Lys Ser Ala Leu
                485                 490                 495

Glu Thr Leu Gln Glu Glu Lys Pro Glu Leu Thr Val Val Phe Glu Pro
                500                 505                 510

Ser Trp


<210>   26
<211>   1429
<212>   PRT
<213>   homo sapiens


<400>   26

Met Ala Gly Gly Ala Trp Gly Arg Leu Ala Cys Tyr Leu Glu Phe Leu
1               5                   10                  15

Lys Lys Glu Glu Leu Lys Glu Phe Gln Leu Leu Leu Ala Asn Lys Ala
                20                  25                  30

His Ser Arg Ser Ser Ser Gly Glu Thr Pro Ala Gln Pro Glu Lys Thr
            35                  40                  45

Ser Gly Met Glu Val Ala Ser Tyr Leu Val Ala Gln Tyr Gly Glu Gln
            50                  55                  60

Arg Ala Trp Asp Leu Ala Leu His Thr Trp Glu Gln Met Gly Leu Arg
65                  70                  75                  80

Ser Leu Cys Ala Gln Ala Gln Glu Gly Ala Gly His Ser Pro Ser Phe
                85                  90                  95

Pro Tyr Ser Pro Ser Glu Pro His Leu Gly Ser Pro Ser Gln Pro Thr
            100                 105                 110

Ser Thr Ala Val Leu Met Pro Trp Ile His Glu Leu Pro Ala Gly Cys
            115                 120                 125

Thr Gln Gly Ser Glu Asp Arg Val Leu Arg Gln Leu Pro Asp Thr Ser
        130                 135                 140

Gly Arg Arg Trp Arg Glu Ile Ser Ala Ser Leu Leu Tyr Gln Ala Leu
145                 150                 155                 160

Pro Ser Ser Pro Asp His Glu Ser Pro Ser Gln Glu Ser Pro Asn Ala
                165                 170                 175

Pro Thr Ser Thr Ala Val Leu Gly Ser Trp Gly Ser Pro Pro Gln Pro
            180                 185                 190

Ser Leu Ala Pro Arg Glu Gln Glu Ala Pro Gly Thr Gln Trp Pro Leu
        195                 200                 205

Asp Glu Thr Ser Gly Ile Tyr Tyr Thr Glu Ile Arg Glu Arg Glu Arg
        210                 215                 220
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23

Glu Lys Ser Glu Lys Gly Arg Pro Pro Trp Ala Ala Val Val Gly Thr
225   230   235   240

Pro Pro Gln Ala His Thr Ser Leu Gln Pro His His His Pro Trp Glu
            245   250   255

Pro Ser Val Arg Glu Ser Leu Cys Ser Thr Trp Pro Trp Lys Asn Glu
            260   265   270

Asp Phe Asn Gln Lys Phe Thr Gln Leu Leu Leu Leu Gln Arg Pro His
        275   280   285

Pro Arg Ser Gln Asp Pro Leu Val Lys Arg Ser Trp Pro Asp Tyr Val
    290   295   300

Glu Glu Asn Arg Gly His Leu Ile Glu Ile Arg Asp Leu Phe Gly Pro
305   310   315   320

Gly Leu Asp Thr Gln Glu Pro Arg Ile Val Ile Leu Gln Gly Ala Ala
            325   330   335

Gly Ile Gly Lys Ser Thr Leu Ala Arg Gln Val Lys Glu Ala Trp Gly
            340   345   350

Arg Gly Gln Leu Tyr Gly Asp Arg Phe Gln His Val Phe Tyr Phe Ser
        355   360   365

Cys Arg Glu Leu Ala Gln Ser Lys Val Val Ser Leu Ala Glu Leu Ile
    370   375   380

Gly Lys Asp Gly Thr Ala Thr Pro Ala Pro Ile Arg Gln Ile Leu Ser
385   390   395   400

Arg Pro Glu Arg Leu Leu Phe Ile Leu Asp Gly Val Asp Glu Pro Gly
            405   410   415

Trp Val Leu Gln Glu Pro Ser Ser Glu Leu Cys Leu His Trp Ser Gln
            420   425   430

Pro Gln Pro Ala Asp Ala Leu Leu Gly Ser Leu Leu Gly Lys Thr Ile
        435   440   445

Leu Pro Glu Ala Ser Phe Leu Ile Thr Ala Arg Thr Thr Ala Leu Gln
    450   455   460

Asn Leu Ile Pro Ser Leu Glu Gln Ala Arg Trp Val Glu Val Leu Gly
465   470   475   480

Phe Ser Glu Ser Ser Arg Lys Glu Tyr Phe Tyr Arg Tyr Phe Thr Asp
            485   490   495

Glu Arg Gln Ala Ile Arg Ala Phe Arg Leu Val Lys Ser Asn Lys Glu
        500   505   510

Leu Trp Ala Leu Cys Leu Val Pro Trp Val Ser Trp Leu Ala Cys Thr
        515   520   525

Tyr Leu Met Gln Gln Met Lys Arg Lys Glu Lys Leu Thr Leu Thr Ser
        530   535   540

24

Lys Thr Thr Thr Thr Leu Cys Leu His Tyr Leu Ala Gln Ala Leu Gln
545   550   555   560

Ala Gln Pro Leu Gly Pro Gln Leu Arg Asp Leu Cys Ser Leu Ala Ala
                565   570   575

Glu Gly Ile Trp Gln Lys Lys Thr Leu Phe Ser Pro Asp Asp Leu Arg
                580   585   590

Lys His Gly Leu Asp Gly Ala Ile Ile Ser Thr Phe Leu Lys Met Gly
            595   600   605

Ile Leu Gln Glu His Pro Ile Pro Leu Ser Tyr Ser Phe Ile His Leu
        610   615   620

Cys Phe Gln Glu Phe Phe Ala Ala Met Ser Tyr Val Leu Glu Asp Glu
625   630   635   640

Lys Gly Arg Gly Lys His Ser Asn Cys Ile Ile Asp Leu Glu Lys Thr
                645   650   655

Leu Glu Ala Tyr Gly Ile His Gly Leu Phe Gly Ala Ser Thr Thr Arg
                660   665   670

Phe Leu Leu Gly Leu Leu Ser Asp Glu Gly Glu Arg Glu Met Glu Asn
            675   680   685

Ile Phe His Cys Arg Leu Ser Gln Gly Arg Asn Leu Met Gln Trp Val
        690   695   700

Pro Ser Leu Gln Leu Leu Leu Gln Pro His Ser Leu Glu Ser Leu His
705   710   715   720

Cys Leu Tyr Glu Thr Arg Asn Lys Thr Phe Leu Thr Gln Val Met Ala
                725   730   735

His Phe Glu Glu Met Gly Met Cys Val Glu Thr Asp Met Glu Leu Leu
                740   745   750

Val Cys Thr Phe Cys Ile Lys Phe Ser Arg His Val Lys Lys Leu Gln
                755   760   765

Leu Ile Glu Gly Arg Gln His Arg Ser Thr Trp Ser Pro Thr Met Val
        770   775   780

Val Leu Thr Arg Trp Val Pro Val Thr Asp Ala Tyr Trp Gln Ile Leu
785   790   795   800

Phe Ser Val Leu Lys Val Thr Arg Asn Leu Lys Glu Leu Asp Leu Ser
                805   810   815

Gly Asn Ser Leu Ser His Ser Ala Val Lys Ser Leu Cys Lys Thr Leu
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Arg Arg Pro Arg Cys Leu Leu Glu Thr Leu Arg Leu Ala Gly Cys Gly
        835   840   845

Leu Thr Ala Glu Asp Cys Lys Asp Leu Ala Phe Gly Leu Arg Ala Asn
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Gln Thr Leu Thr Glu Leu Asp Leu Arg Phe Asn Val Leu Thr Arg Ala

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Gly Ala Lys His Leu Cys Gln Arg Leu Arg Gln Pro Ser Cys Lys Leu
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Gln Arg Leu Gln Leu Val Ser Cys Gly Leu Thr Ser Asp Cys Cys Gln
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Asp Leu Ala Ser Val Leu Ser Ala Ser Pro Ser Leu Lys Glu Leu Asp
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Leu Gln Gln Asn Asn Leu Asp Asp Val Gly Val Arg Leu Leu Cys Glu
            930                   935                   940

Gly Leu Arg His Pro Ala Cys Lys Leu Ile Arg Leu Gly Leu Asp Gln
945                   950                   955                   960

Thr Thr Leu Ser Asp Glu Met Arg Gln Glu Leu Arg Ala Leu Glu Gln
            965                   970                   975

Glu Lys Pro Gln Leu Leu Ile Phe Ser Arg Arg Lys Pro Ser Val Met
            980                   985                   990

Thr Pro Thr Glu Gly Leu Asp Thr Gly Glu Met Ser Asn Ser Thr Ser
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Ser Leu Lys Arg Gln Arg Leu Gly Ser Glu Arg Ala Ala Ser His
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Val Ala Gln Ala Asn Leu Lys Leu Leu Asp Val Ser Lys Ile Phe
      1025                  1030                  1035

Pro Ile Ala Glu Ile Ala Glu Glu Ser Ser Pro Glu Val Val Pro
      1040                  1045                  1050

Val Glu Leu Leu Cys Val Pro Ser Pro Ala Ser Gln Gly Asp Leu
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His Thr Lys Pro Leu Gly Thr Asp Asp Asp Phe Trp Gly Pro Thr
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Gly Pro Val Ala Thr Glu Val Val Asp Lys Glu Lys Asn Leu Tyr
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Arg Val His Phe Pro Val Ala Gly Ser Tyr Arg Trp Pro Asn Thr
      1100                  1105                  1110

Gly Leu Cys Phe Val Met Arg Glu Ala Val Thr Val Glu Ile Glu
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Phe Cys Val Trp Asp Gln Phe Leu Gly Glu Ile Asn Pro Gln His
      1130                  1135                  1140

Ser Trp Met Val Ala Gly Pro Leu Leu Arg Leu Lys Ala Gln Ile
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Gly Ala Val Glu Ala Val His Leu Pro His Phe Val Ala Leu Gln
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Gly Tyr His Val Arg Thr Trp Leu Phe Gln Met Ala His Phe Lys
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His Ile Val Leu Glu Asn Pro Ser Phe Ser Pro Leu Gly Val Leu
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Leu Lys Met Ile His Asn Ala Leu Arg Phe Ile Pro Val Thr Ser
    1220   1225   1230

Val Val Leu Leu Tyr His Arg Val His Pro Glu Glu Val Thr Phe
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His Leu Tyr Leu Ile Pro Ser Asp Cys Ser Ile Arg Lys Glu Leu
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Glu Leu Cys Tyr Arg Ser Pro Gly Glu Asp Gln Leu Phe Ser Glu
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Phe Tyr Val Gly His Leu Gly Ser Gly Ile Arg Leu Gln Val Lys
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Asp Lys Lys Asp Glu Thr Leu Val Trp Glu Ala Leu Val Lys Pro
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Gly Asp Leu Met Pro Ala Thr Thr Leu Ile Pro Pro Ala Arg Ile
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Ala Val Pro Ser Pro Leu Asp Ala Pro Gln Leu Leu His Phe Val
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Asp Gln Tyr Arg Glu Gln Leu Ile Ala Arg Val Thr Ser Val Glu
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Val Val Leu Asp Lys Leu His Gly Gln Val Leu Ser Gln Glu Gln
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Tyr Glu Arg Val Leu Ala Glu Asn Thr Arg Pro Ser Gln Met Arg
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Lys Leu Phe Ser Leu Ser Gln Ser Trp Asp Arg Lys Cys Lys Asp
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Gly Leu Tyr Gln Ala Leu Lys Glu Thr His Pro His Leu Ile Met
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Glu Leu Trp Glu Lys Gly Ser Lys Lys Gly Leu Leu Pro Leu Ser
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Ser

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(212) PRT
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Asp Tyr Lys Arg Arg Arg Asp Lys
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